

WHAT IS CLAIMED IS:

1. A process for producing a magnetite having a coercivity of 6.366 kA/m to 10.345 kA/m (= 80 to 130 Oe) and an octahedral particle shape comprising
- 5 a) placing an alkaline component in the form of an aqueous solution under a protective gas,
  - b) heating the alkaline component to a temperature of 50°C to 100°C,
  - 10 c) adding an iron(II) component in the form of an aqueous solution whereby the molar ratio of iron(II) component to one equivalent of alkaline component is 0.38 to 0.45, while maintaining the temperature at 50°C to 100°C,
  - d) treating the suspension obtained in c) with an oxidizing agent, whereby the rate of oxidation is 20 to 50 mol.%  
15 Fe(II)/h until the iron compound has an Fe(III) content of more than 65 mol.%,
  - e) after the oxidation in d), again adding an Fe(II) component in the form of an aqueous solution to the suspension obtained in d) whereby the molar ratio of Fe(II) in c) to one equivalent  
20 of total alkaline component used is 0.47 to 0.49,
  - f) treating the suspension obtained in e) with an oxidizing agent, whereby the rate of oxidation is 20 to 50 mol.%  
Fe(II)/h until the iron compound has an Fe(III) content of more than 65 mol.%,
  - 25 g) filtering the suspension, and washing, drying and grounding the residue.
2. The process of Claim 1 comprising b) heating the alkaline component to a temperature of 70°C to 90°C.
3. The process of Claim 1 wherein the alkaline component  
30 comprises ammonia, an alkali metal hydroxide, an alkaline-earth metal hydroxide, an alkaline-earth metal oxide or an alkali metal carbonate.
4. The process of Claim 1 wherein the iron(II) component comprises iron sulfate or iron chloride.

20447315-014402

5. The process of Claim 1 wherein the oxidizing agent comprises atmospheric oxygen,  $H_2O_2$ , chlorine, an alkali metal chlorate or an alkali metal nitrate.

5 6. A process for coloring matter comprising contacting the matter with an effective amount of a magnetite produced according Claim 1.

7. The process of Claim 6, wherein the matter comprises paper, plastic, paint, fiber, concrete, dye, concrete, or concrete moldings.

10 8. The process of Claim 6, wherein the matter is a device useful in electrophotography.

9. The process of Claim 6, wherein the matter is a device useful in magnetic toners.

10. A magnetic toner comprising the magnetite obtained by the process of Claim 1.

15

201110-51E24001